particular, Dr. Mary Scharlieb, the doctor of medicine, differs in emphatic terms from Dr. Marie Stopes, the doctor of science and philosophy.

The second, third, and fourth aspects of the subject of the control of parenthood scarcely fall to be reviewed in a journal like NATURE, but the first may fairly claim notice. Prof. Hill's contribution is rather too closely packed with facts regarding embryology, pregnancy, housing, and food to be grasped easily in its significance; but its author is sturdily opposed to artificial means of preventing conception which "demand a premeditated act in what should be a natural function and disturbs the normality of the sexual act." Such a use of preventives tells also far more against the woman than the man. Prof. Hill sees the risks, the physiological risks as well as the social, of the only child. His solution of the problem of keeping down the vigour of sexual desire is "a wisely regulated diet, *plus* hard physical exercise and occupation."

Prof. J. Arthur Thomson, from the point of view of biology, writes with all his accustomed picturesqueness of imagery, but the brilliancy of his phrasing is somewhat of a danger, and may even constitute a sort of verbal camouflage, a risk which he himself seems to recognise when in his closing paragraph he says: "We must not, however, look at things too biologically . . . we are mind-and-body creatures, and the greatest thing in human life is love." After enumerating all the evils which may arise from birth control, he directs attention to the fact that the good side of the reduction of the birth-rate deserves more consideration than it usually receives. It may improve the health of both mothers and children, give quality for quantity, render life less anxious and earlier marriage more practicable, work against war, make woman's position more independent, and so forth. His contrast between the keeping up of numbers by the fertility or spawning method, with its unlimited production of lives the majority of which almost immediately cease, and by what he finely designates "economised reproduction associated with increased parental care," is absolutely conclusive in favour of the latter plan.

The spawning solution among the lower animals themselves is less effective in the long run than that which Peripatus adopted—viz. the giving birth to a few miniature adults ready at once to fend for themselves. "The tapeworm, with its degenerate body and drifting life of ease, has its millions of embryos; the golden eagle, with its differentiated body and controlled life, has two eaglets at a time." Yet it is not securely known that high individuation directly lessens fertility, for whilst some of the greatest men were childless a fair list of famous fathers can be made out. After all, the strictly scientific or the rigidly biological aspect of human reproduction refuses to be dissociated from the other ways of looking at things; and Prof. Thomson closes with words which have weight: "If we lose the adventurousness of early marriage on meagre material resources, and the delight of having children while we are young enough to sympathise with them, we are missing some of the fragrant flowers of life."

Our Bookshelf.

Recueil de l'Institut Botanique Léo Errera (Université de Bruxelles). Publié par L. Errera. Tome iv. Pp. xi+653+plates. (Brussels: Maurice Lamertin, 1920.) 50 francs.

THIS ponderous volume contains a selection of papers published in various scientific journals from 1885 to 1900 by the late Léo Errera and other Belgian botanists. There are a few short communications by Errera at the beginning of the volume of a general nature, such as those on the law of the conservation of life, spontaneous generation, and the mechanism of sleep. The volume is mainly a collection of papers on plant cytology and on the physiology of organisms of simple structure. Workers specially interested in these branches will appreciate the advantage of associating in one volume a number of papers scattered through many different journals, but as all these journals are fairly accessible the production of a great mass of reprints may seem somewhat extravagant in view of the difficulties attending scientific publication at the present time.

The volume contains thirty-two papers in all; nineteen, mostly brief, are by Errera, including one in which the inheritance of acquired characters in a mould-fungus (Aspergillus) is maintained; others deal with protoplasmic movement, the ascent of sap, and an apparatus to demonstrate the mechanism of stomates. Communications by E. Laurent and G. Bullot deal with the physiology of growth and curvature of the fungus Phycomyces; and Jean Massart discusses the sensibility to various external influences of unicellular organisms under several headings. The irritability of Noctiluca he describes as analogous to that of the Sensitive Plant, the essential difference lying only in the manner of the reaction. The longest paper is by E. de Wildeman (published in 1893) on the formation of the dividing wall in cells; the subjects of study were mainly species of mosses and brown and red seaweeds.

Manuel de Topométrie. Opérations sur le Terrain et Calculs. By Jules Baillaud. Pp. vii+222. (Paris: H. Dunod, 1920.) 13 francs.

IN this book Capt. Baillaud sets down his war experience in the preparation of the plans neces-

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sary for artillery work, gathered during two years spent as Chef de Brigade Topographique. No claim is made to the production of a complete text-book of surveying; the author's limited experience would preclude that; and, as will be naturally understood, the practised surveyor has little to learn from this volume. The only point where it may possibly be of service in supplementation to more complete treatises is in the discussion given of the problem of resection, particularly of resection from more than three points, a problem somewhat neglected by English writers. A fervent claim is made to the superiority of the centesimal division of the quadrant, which, it is held, offers practical advantages, such that, once used, it is hard to understand how its merits can be doubted; "one returns with difficulty to the sexagesimal division." However this may be, the subject is now beyond discussion, there not being the remotest chance of the use of the centesimal system spreading outside the pale of the Service géographique de l'Armée. Even admitting that there are some gains in facility of computation, we think these dearly purchased at the cost of this isolation.

A recommendation is made that when taking out the number corresponding to a given logarithm a table of antilogs should be used, and it is regretted that no such table, extending to more than four decimal places, has been published. This must be read as meaning published in France. Such tables are common here, and an excellent little set of five-figure tables, including antilogs, is (or was?) procurable at the modest price of sixpence, while Filipowski's seven-figure tables are well known. They are not more generally employed solely because computers find that, on the whole, the use of the simple log table is preferable.

E. H. H.

Basic Slags: Their Production and Utilisation in Agriculture. (Reprinted from the Transactions of the Faraday Society, vol. xvi., part ii., 1920.) Pp. 259–335. (London: The Faraday Society, n.d.) 7*s.* 6*d.*

This full report of the discussion organised by the Faraday Society last March on the utilisation of basic slag in agriculture forms a convenient little booklet which agricultural lecturers and experts will find of considerable value.

The necessity for the discussion arose out of the change in the manufacture of steel which began before the war, but has proceeded at an increasing rate in the past few years. In consequence, agriculturists no longer obtain the slag to which they have been accustomed, and which was used in the classical experiments that have passed into agricultural tradition; they obtain instead something completely different under, however, the same name. An account of the discussion was reported in Nature of April 8, 1920 (p. 183).

From the agricultural point of view there is an interesting account of the field trials with the new slags, which suggests for them a better value than was first expected from the chemical analysis. On the works side the report does not make very hopeful reading; no easy way could be found for increasing the phosphorus content of the slag, apart from the simple addition of mineral phosphates, which would be quite unnecessary.

The meeting was useful, and the publication of the papers will prove even more so, as it will enable a wider circle to appreciate the present position of the basic slag problem. It is gratifying to know that, as the direct outcome of the discussion, the Ministry of Agriculture set up a Committee of steel-makers and agriculturists to go into the question of the improvement of basic slag, and to report on any action that could be taken. The Committee is presided over by Dr. E. J. Russell, of the Rothamsted Experimental Station, and is understood to be pursuing its inquiries with a view to an early report. The Faraday Society is to be congratulated on the success of its efforts.

Les Variations et leur Hérédité chez les Mollusques. By Paul Pelseneer. (Mémoires de l'Académie Royale de Belgique, Classe des Sciences, Collection in-8°. Série II., tom. v.) Pp. 826; 286 illustrations in the text. (Brussels, 1920.)

Cut off from the sea, his library, and his laboratory at Ghent, that doyen of malacologists, Dr. Paul Pelseneer, during the German occupation of Belgium, fell back on his note-books and such material as lay to his hand, and has put together a fine volume that will be a work of reference for practically all time.

The variations observable in the Mollusca have never hitherto been systematically studied as a whole. Dr. Pelseneer now takes them up seriatim as they occur in the shell, in the external features of the animal, and in the various internal organs and their systems (circulatory, respiratory, nervous, etc.), plentifully quoting original observations in addition to his own, and illustrating the whole with reproduced and new figures. He classes these variations and discusses their interrelationships, individual and specific, in different organs, their cause, especially when due to environment, and finally their heredity.

It is impossible within the limits of a short notice to summarise even the author's conclusions: the work itself must be consulted. When, however, he states that there is no example in the Mollusca of preadaptation, we venture to think he must have overlooked the case of the myophore in Velates, and of the dorsal depression in the shell of the young Nautilus, which later on receives the ventral curve of the preceding whorl, as pointed out by Hyatt in his "Phylogeny of an Acquired Characteristic."

The book is touchingly dedicated "A la mémoire de mes Compatriotes victimes de l'agression Allemande (1914–1918)."

B. B. Woodward.

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